

EXHIBIT 1-ATTACHMENT B

**SIERRA CLUB COMMENTS ON
CONSENT DECREES, ATT. B:**

DECLARATION OF BRUCE BELL

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF OHIO
WESTERN DIVISION

Sierra Club and Marilyn Wall.

Plaintiffs

v.

The Board of County Commissioners
Of Hamilton County, The City of Cincinnati,
And the Metropolitan Sewer District of Greater
Cincinnati

Defendants

Case No. 1-02--135
Judge Sandra S. Beckwith
Magistrate Judge Jack Sherman

DECLARATION OF BRUCE A. BELL, Ph.D., P.E., DEE

I, Bruce A. Bell, state and declare as follows:

1. I am over 18 years of age and am competent to testify regarding the following:
2. I am president of Carpenter Environmental Associates, Inc. of Ramsey, New Jersey, an environmental engineering and science firm. I hold a Bachelor's degree in civil engineering, a Master's degree in environmental engineering, and a Ph.D. in environmental engineering, all from New York University. I am a registered professional engineer in New York and New Jersey. I am a diplomat of the American Academy of Environmental Engineers and serve on the committee that prepares the written and oral qualifying examinations for the Academy. I have over 32 years experience in the field of environmental engineering with expertise in wastewater collection and treatment. My experience includes the design and evaluation of collection systems, wastewater treatment plants and teaching of courses in environmental engineering at the undergraduate and graduate levels. My curriculum vita is attached as Appendix A.

Bell
#10

3. A list of the documents I reviewed in preparing my Declaration is attached as Appendix B.
4. A sanitary sewer overflow (SSO) is any discharge or overflow of untreated sewage from a separate sanitary sewer system at any point other than a permitted discharge point, regardless of whether the discharge reaches waters of the United States. SSOs occur when flows exceed the capacity of a sewer. SSOs can be caused by high flows during wet weather conditions that exceed sewer capacity and/or by blockages such as grease, roots, debris, and pump station failures.¹ SSOs contain high levels of disease causing microorganisms, suspended solids, toxic pollutants, floatables, nutrients, oxygen-demanding organic compounds, oil and grease, and other pollutants.
5. SSOs can discharge to areas where they present high risks of human exposure such as streets, private property, basements, rivers, beaches, and other receiving waters. The disease causing microorganisms found in the discharge make SSOs a risk to human health. SSOs can also cause flooding and property damage. SSOs that reach receiving waters will adversely impact water quality and present a threat to aquatic organisms.²
6. Defendants' SSO rate is grossly higher than that of an average utility. Considering only the number of SSOs that occurred from the identified, numbered SSO locations and the entire length of sewers in both the combined and sanitary sewer system, Defendant's had a median of 50.42 SSOs per hundred miles per year from 1997 to 2001.
7. The SSO rate I calculated from Defendant's data is significantly lower than Defendant's real SSO rate for a number of reasons. First, I do not have available to me at this time the miles of sewers contained only in the separate sanitary sewer system and thus have used the total miles of sewers operated by Defendant. Defendants' actual SSO rate is higher than I calculated using total miles of sewers, because SSOs do not occur, by definition, in combined sewers. Second,

¹ United States Environmental Protection Agency, "Sanitary Sewer Overflows What are they and how can we reduce them?", EPA 832-K-96-001, Summer 1996.

² United States Environmental Protection Agency, "Sanitary Sewer Overflows What are they and how can we reduce them?", EPA 832-K-96-001, Summer 1996.

not all, and perhaps not most, of Defendant's SSOs are included in the rate I calculated. A summary of manhole overflows, sewage surfacing, and basement backups from 1997 through 2001 provided by Defendants documents over 14,000 occurrences of manhole overflows, sewage surfacing, and basement backups during that five year period. These SSOs appear to be in addition to the numbered SSOs reported monthly by Defendants to the State of Ohio. From the data contained in the summary, it is clear that numerous SSOs were due to Defendants' actions or inactions. With further discovery, I would be able to determine how many more SSOs per 100 miles per year that were not reported to Ohio EPA are attributable to Defendants' conduct.

8. Recent benchmarking studies have documented median SSO rates of 5.06 SSOs per 100 miles³, 3.68 SSOs per 100 miles⁴, and 3.82 SSOs per 100 miles⁵. Defendants' median SSO rate from identified, numbered SSO locations only is from 10 to almost 14 times that of an average utility. Defendant's SSO rate is over 20 times higher than the rates experienced by best in class utilities⁶. Fairfax County Virginia, which operates a collection system of approximately 3,100 miles and has been actively pursuing a capacity, management, operation, and maintenance (CMOM) program since 1995, has reduced its average SSO rate for the last four years to under 2 SSOs per 100 miles per year.⁷
9. The Defendants' SSOs are ongoing and will continue to occur under the Interim Partial Consent Decree (IPCD) for many years to come.
10. The IPCD requires construction that will result in elimination of only 18 (or 19 if SSO 700 is included) out of 101 capacity related SSOs in the next 16 to 22 years. Again, 101 is just a number that is reported to Ohio EPA. It does not represent the total number of SSOs in the system.

³ Optimization of Collection System Maintenance Frequencies and System Performance. Prepared by Black & Veatch for the ASCE and the USEPA. February 1999.

⁴ Protocols for Identifying Sanitary Sewer Overflows, Prepared by Black & Veatch for the ASCE and the USEPA, June 2000.

⁵ Technical Memorandum: Overflow Reduction Targets. Prepared by HDR Engineering for the City of San Diego, April 2001.

⁶ Technical Memorandum: Overflow Reduction Targets. Prepared by HDR Engineering for the City of San Diego, April 2001.

⁷ <http://www.epa.gov/npdes/ssos/virginia>

11. SSOs have been a violation of the Clean Water Act and of NPDES permits (including defendant's permit) since the Clean Water Act was passed in 1972 and since Defendants have had an NPDES permit.
12. There is a technologically feasible and simple remedy to prevent Defendant's capacity related SSOs that has been available in my direct experience for over 30 years. Defendants could have simply built sewers and treatment plants that were of adequate size for the wet weather flow that actually occurs.
13. In 1992 the Ohio Environmental Protection Agency issued a Director's Final Findings and Order (DFFO) that required Defendants to submit a plan with deadlines to eliminate all capacity related SSOs. Based upon information available to me, Defendants have never submitted such a plan with deadlines for elimination of all SSOs.
14. In my experience there is no technical reason that construction of adequate size sewers and necessary expansion of wastewater treatment plants could not have been completed within ten years of beginning such a program. For example, the City of Atlanta, Georgia has committed to a remediation program for wet weather overflows (in the case of Atlanta combined sewer overflows (CSO)) that began in 1998 and will be completed by mid-2007 that includes separation of approximately 25% of its combined sewer system, construction of 14 miles of tunnel ranging in diameter from 24 to 36 feet, two high rate chemically enhanced treatment systems (for CSOs), and upgrades at its wastewater treatment plants.
15. The IPCD requires planning for the elimination of capacity related SSOs, but specifically states that construction or implementation of these plans is not required under the IPCD and that construction or implementation shall only be required pursuant to future negotiations and/or a subsequent enforcement action (IPCD, § VII.E.2).
16. Planning for elimination of capacity related SSOs without requiring actual implementation of those plans will not assure elimination of capacity related SSOs. In my experience, I have never seen a Consent Decree that requires planning without requiring subsequent implementation of those plans.

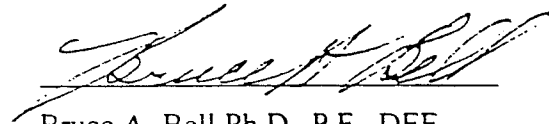
17. The IPCD requires installation of a Chemically Enhanced High Rate Settling (CEHRS) and storage facility as an interim measure at SSO 700. SSO 700 is a highly active SSO that frequently discharges raw sewage in large volumes.
18. I have reviewed the literature and the predicted performance of such CEHRS systems at other locations. In my opinion, a CEHRS cannot meet the secondary treatment requirements required by the Clean Water Act and its implementing regulations.
19. Secondary treatment regulations require monthly average effluent biochemical oxygen demand (BOD) and total suspended solids (TSS) concentrations to be less than or equal to 30 mg/l. Weekly average effluent BOD and TSS concentrations must be less than or equal to 45 mg/l. In addition, secondary treatment systems must remove, on a monthly average basis, 85% of the influent BOD and TSS.
20. The literature indicates that a CEHRS cannot meet the secondary treatment concentration limits or the 85% percent removal requirement for BOD⁸.
21. The regulations at 40 CFR §133.103 provide for exemptions to the 85% removal requirements. Defendants cannot qualify for these exemptions. In order to qualify for exemption from the 85% removal requirement, Defendants must show that the system can meet secondary concentration effluent limits and that there is not excessive inflow and infiltration in its collection system. Defendants can make neither of these showings.
22. It is technically feasible to build a secondary treatment plant, which would comply with the secondary treatment requirements contained in the Clean Water Act and its implementing regulations to treat the discharges from SSO 700 within five years.
23. The IPCD allows new sewer hookups tributary to active SSOs provided that, based upon criteria and formulae a reduction of five gallons of flow is achieved for each gallon of flow added by new development. Verification of the calculated flow reduction is not required. This approach will unnecessarily extend the time that capacity related SSOs are active.

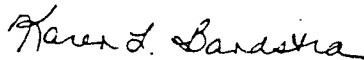
⁸ A summary of ACTIFLO (a CEHRS system) performance prepared by the City of Atlanta indicates that less than 60% of influent BOD is removed by such systems.

24. It is clear that the Short-Term Adequate Capacity Plan (STACP) contained in the IPCD is not designed to eliminate active SSOs, but rather "The objective of the STACP Plan is to prevent any wastewater flows from new development from aggravating or in any way adding to the quantity discharged from any downstream SSO." (IPCD §VIII.C).
25. The IPCD perpetuates existing unpermitted capacity related SSOs by allowing additional raw sewage to be added to the collection system prior to providing the capacity to carry that sewage to a wastewater treatment plant without unpermitted discharges. In addition, the ongoing SSOs will contain higher pollutant concentrations because each 5 gallons of relatively clean storm water removed will be replaced by one gallon of raw sewage, which contains high concentrations of disease causing microorganisms as well as other pollutants.

I swear under the penalty of perjury that the foregoing is true and to the best of my knowledge and belief.

Executed on this day the 19 of April 2002.


Bruce A. Bell Ph.D., P.E., DEE



KAREN L. BANDSTRA
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES 3/13/07

CARPENTER ENVIRONMENTAL ASSOCIATES, INC.
CEA ENGINEERS, P.C.

CURRICULUM VITA

BRUCE A. BELL, Ph.D., P.E., DEE, PRESIDENT

EDUCATION

B.S. Civil Engineering, New York University, 1968
M.S. Civil Engineering, New York University, 1969
Ph.D. Environmental Engineering, New York University, 1974

REGISTRATION

Registered professional engineer in New York and New Jersey
Professional planner in New Jersey
Diplomate, American Academy of Environmental Engineers

PROFESSIONAL HISTORY

President, Carpenter Environmental Associates, Inc., Ramsey, New Jersey, 1978 - present
Promoted to President in 1991.

Responsible for technical direction of all engineering activities of the firm including:

Wastewater/Storm Water

- Design and supervision of construction for the upgrading of municipal sewage treatment plants.
- Design of several small private wastewater treatment plants.
- Collection system evaluations: CSO/SSO.
- Operational evaluation, process testing and review, and troubleshooting of POTWs.
- Conceptual design for biological nutrient removal.
- Evaluation of nitrogen removal alternatives.
- Waste treatability studies for industrial wastes.
- Sludge treatment and management evaluations.
- Water quality modeling; Waste assimilative capacity studies.
- Pilot studies on the treatment of munitions bearing wastewaters.
- NPDES permitting, comments, negotiations, and appeals.
- Industrial pretreatment studies and implementation of industrial pretreatment programs.
- Preparation of storm water management plans and Storm Water Pollution Prevention Plans.

Site Assessments/Hazardous Materials

- SPCC/DPCC Plans.
- Hazardous waste site assessments and remediations.
- Preparation and evaluation of environmental impact statements.
- RCRA closures.

Air

- Air permitting, comments, negotiations, and appeals.

Litigation Support

- Technical litigation support and expert witness testimony at deposition and trial in federal and state courts.

Associate Professor and Professor of Engineering, The George Washington University,

Washington, D.C., 1978 - 1987

Promoted to Professor of Engineering in 1982.

Responsible for the University's environmental engineering program.

Directed both graduate and sponsored research.

Taught undergraduate and graduate courses in water supply, wastewater treatment, industrial waste treatment, sanitary engineering design, hydraulics, environmental chemistry, principles of environmental engineering, and environmental impact assessment.

Served as visiting research scientist and consultant at the U.S. Army Medical Bioengineering Research and Development Laboratory. --

Project Manager and Vice President, Flood & Associates, Inc., Consulting Engineers of

Jacksonville, Florida, 1975 - 1978

Promoted to vice president and director of environmental engineering design in 1976.

Responsible for the technical and financial aspects of all of the firm's environmental engineering design projects.

Served as project manager for numerous major treatment plant and pumping station design projects including: design of a 20 MGD advanced wastewater treatment plant which included phosphorous removal, nitrification, denitrification, filtration and ozonation, as well as sludge incineration and lime recovery through recalcination; design of the upgrading and expansion of a 10 MGD lime water softening plant; design of sludge and solids handling systems for a 35 MGD municipal wastewater treatment plant; design of a 5 MGD pure oxygen expansion for a combined municipal/brewery waste treatment plant; design of a 15 MGD activated sludge plant; and design of several large wastewater pumping stations.

Responsible for review of technical content of the firm's 201 Facilities Plans and sludge management studies.

Directed the firm's efforts as consultant to the Commonwealth of Virginia in the research, development, planning, and design related to the contamination of the James River and Hopewell wastewater treatment plant with the pesticide Kepone.

Responsible for the preparation of alternative analysis for the remediation of Kepone contamination of the Hopewell wastewater treatment plant.

Directed research efforts in Kepone biodegradation and incineration.

Systems Manager, Envirotech Corporation, Belmont, California, 1973 - 1975

Responsible for profit and loss for chemical-physical and advanced wastewater treatment systems, including thermal and solids handling systems and carbon regeneration systems.

Provided marketing and technical sales support, as well as application engineering.

Responsible for allocation and management of research and development funds in the area of advanced wastewater treatment.

Directed pilot studies in the areas of advanced wastewater treatment, carbon regeneration, and thermal sludge disposal. Carried out research into carbon adsorption and regeneration.

Responsible for process and system designs for solids handling systems and advanced wastewater treatment systems.

Instructor of Civil Engineering, New York University, New York, 1969 - 1973

Taught sixteen different courses in Civil and Sanitary Engineering.

Maintained active consulting practice in environmental engineering.

Consulting activities included wastewater treatability studies, pilot plant investigations, design of industrial pretreatment facilities, lake evaluations, and environmental impact analysis.

Assistant Civil Engineer, New York City Transit Authority, New York, 1964

Responsible for resident inspection of heavy construction.

Appointed co-director of a project to initiate the Authority's research into appropriate methods for noise abatement in subway systems.

Field Engineer, Lasker Goldman, Inc. General Contractors, 1962

Performed field layout and supervision of construction on the construction of a major secondary wastewater treatment plant.

AFFILIATIONS

Water Environment Federation
International Association on Water Quality
American Society of Civil Engineers
American Academy of Environmental Engineers

HONORS

Diplomate of the American Academy of Environmental Engineers
Member of Tau Beta Pi, Chi Epsilon, and Perstare et Preaestare honor societies
Received the Founders Day Award and Hydraulics Prize from New York University
Received the Outstanding Design Achievement Award from the Florida WPCA
Nominated for the WPCF Eddy Medal for paper on Munitions Waste Treatment
Listed in Who's Who in the South and Southwest, International Who's Who in Engineering, and American Men and Women of Science

PROFESSIONAL ACTIVITIES

Served as a reviewer for WPCF (WEF) Manuals of Practice for Sludge Thickening, Nutrient Removal, and Sludge Conditioning.
Member of ASCE publication review committee (1979 -).
Member WPCF Technical Practices Committee (1977 - 1988).
Reviewer, Research and Equipment proposals, NSF (1979 - 1988).

Member, Program Committee, Seminar on Development and Assessment of Environmental Quality Standards, American Academy of Environmental Engineers (1981).

Faculty, short course on Hazardous Waste Management, Harvard School of Public Health (1982).

Faculty, short courses on Hazardous Waste Management in the 80's, American Public Health Association (1983).

Conference Co-Chairman, Conference on the Treatment of Metal Bearing Wastewaters, NRDC/Texas Instruments, Inc., Mansfield, MA. (1985).

State Membership Chairman, American Academy of Environmental Engineers (1985 - 1987).

Faculty member and developer of course materials, Industrial Pretreatment Enforcement - A Workshop for POTW Attorneys, USEPA and Environmental Law Institute (1990 - 1992).

Faculty member New England Judges' Conference on Environmental Law, Environmental Law Institute, (1991).

Faculty member, New Jersey Judicial College (1992).

Course developer and faculty member "Basic Enforcement Skills," USEPA National Environmental Training Institute, (1992-1993).

Member, Nitrogen Technical Advisory Committee, New York City Department of Environmental Protection (1994 -).

Member, Technical Review Committee for upgrading of Passaic Valley Sewerage Commissioners 330 mgd pure oxygen treatment plant, Newark, New Jersey (1995 -).

Adjunct Professor, taught graduate course - "Analysis of Receiving Waters", New Jersey Institute of Technology (1995 - 1997).

Member, Water Supply and Wastewater sub-committee, American Academy of Environmental Engineers, (1996-).

Member, Plant Operation and Design Technical Advisory Committee for 100,000 gpd municipal package plant, Town of Saluda, North Carolina (1998 -).

PUBLICATIONS

1. Schneider, G., Cardenas, R.R., Jr., Bell, B.A. and Beale, D., The Passaic River, Proceedings, Essex County Environmental Problems and Resources Conference, 1971.
2. Cardenas, R.R., Jr. and Bell, B.A., Impact - An Environmental Case Study Involving a Lake and a Builder, Proceedings, American Water Resources Association Conference, St. Louis, MO, 1972.
3. Bell, B.A., Advanced Wastewater Treatment, Australian Process Engineering, 1974.
4. Bell, B.A., Concepts and Operating Experiences - Advanced Wastewater Treatment Plants, Proceedings, Sixth Federal Convention, Australian Water and Wastewater Association, Melbourne, Australia, 1974.
5. Bell, B.A. and Molof, A.H., A New Model of Granular Activated Carbon Adsorption Kinetics, Water Research, 9, 857-860, 1975.
6. Bell, B.A. and Molof, A.H., Use of Continuously Stirred Flow Systems for Laboratory Investigation of Wastewater Treatability with Activated Carbon, Proceedings 30th Annual Purdue Industrial Waste Conference West Lafayette, IN, 1975.

7. Gidlund, E.R. and Bell, B.A., Groundwater, in Encyclopedia of Environmental Science and Engineering, E. Ziegler and J. Pfafflin, Eds., Gordon and Breach, Science Publication, New York, 1976.
8. Bell, B.A. and Tsumpes, R.V., Advanced Wastewater Treatment - Pensacola, Florida, Proceedings, Florida Section, ASCE, Orlando, FL, 1976.
9. Bell, B.A. and Tsumpes, R.V., Brewery Waste Treatment - Trials and Tribulations, Proceedings 5th Annual WWEMA Industrial Pollution Conference, Atlanta, GA, 1977.
10. Bell, B.A. and Zaferatos, T.E., Evaluation of Alternate Solids Handling Methods for Advanced Waste Treatment Lime Sludges, Journal of the Water Pollution Control Federation, 49, 146, 1977.
11. Bell, B.A. and Welday, J.M., Comparison of Complete Mixed Activated Sludge and Unox Treatment of Brewery Wastes, Water - 1977, G. Bennett, Ed. AIChE Symposium Series, 74, 29, 1978.
12. Bell, B.A., Whitmore, F.C. and Cardenas, R.R. Jr., Anaerobic Biodegradation of Kepone in Sewage Sludge, Proceedings, 1978 National Conference on Control of Hazardous Material Spills, Miami Beach, Florida, 1978.
13. Bell, B.A., Gilley, W.F. and Welday, J.M., Alternate Methods for the Disposal of the Pesticide Kepone, Proceedings, Third Annual Conference on Treatment and Disposal of Industrial Wastewaters and Residues, Houston, Texas, 1978.
14. Bell, B.A. and Welday, J.M., Pure Oxygen and Air Activated Sludge Treatment of Brewery Wastes, Proceedings, International Environmental Colloquium, University of Liege, Liege, Belgium, 1978.
15. Bell, B.A. and Welday, J.M., Thermal Conditioning and Incineration of Combined Brewery/Municipal Sludges, Proceedings, 7th Annual WWEMA Industrial Pollution Conference, Philadelphia, PA, 1979.
16. Bell, B.A., Energy Conservation and Production from the Anaerobic Digestion of Thermally Conditioned Sludges and Decant Liquors, Proceedings Energy Optimization of Water and Wastewater Management for Municipal and Industrial Applications Conference, US D.O.E., ANL/EES-TM-96, 1979.
17. Bell, B.A., Jeris, J.S. and Welday, J.M., Anaerobic Fluidized Bed Treatment of Sludge Conditioning Decant Liquor, Proceedings Anaerobic Filters: An Energy Plus for Wastewater Treatment, US D.O.E. Symposium, Orlando, FL, 1980.
18. Bell, B.A., Advanced Wastewater Treatment, in Manual of Instruction for Wastewater Treatment Plant Operators, New York State Department of Environmental Conservation, 1980.
19. Bell, B.A., Jeris, J.S. and Welday, J.M., Treatment of Liquors from Thermally Conditioned Sludges by Conventional and Fluid Bed Anaerobic Systems, Proceedings ASCE National Conference on Environmental Engineering, New York, NY, 1980.

20. Bostater, C.R., Jr., Ambrose, R.B. and Bell, B.A., *Modeling the Fate and Transport of Chemicals in Estuaries: Current Approaches and Future Needs*, Aquatic Toxicology and Hazard Assessment: 4th Congress ASTM, STP 737, D.R. Branson and K.L. Dickson, Eds. American Society for Testing and Materials, 1981.
21. Mandt, M.G. and Bell, B.A., *Oxidation Ditches in Wastewater Treatment*, Ann Arbor Science Publishers, Ann Arbor, MI, 1982.
22. Bell, B.A., Cardenas, R.R., Jr., Huddleston, R.E., Jr. and Martin A.R., *Procedure for Evaluation of the Impact of Intermittently Discharged Industrial Wastes on Municipal Treatment Facilities*, in *Industrial Wastes*, J.E. Alleman and J.T. Kavanagh Eds., Ann Arbor Science Publishers, Ann Arbor, MI, 1982.
23. Kobylinski, E.A. and Bell, B.A., *Light Metal Cation Inhibition in Anaerobic Digestion*, Proceedings ASCE Environmental Engineering Conference Boulder, CO, 1983.
24. Bell, B.A. and Kobylinski, E.A., *Design of Anaerobic Digestion of Lime Sludges*, Journal of Water Science and Technology, 16, 375-386 (1984).
25. Bell, B.A., and Hardcastle, G.J., *Treatment of a High Strength Industrial Waste in a Continuously Fed, Intermittently Operated Activated Sludge System*, Journal of the Water Pollution Control Federation, 56, 11, 1160-1164, 1984.
26. Gidlund, E.R. and Bell, B.A., *Groundwater*, in Encyclopedia of Environmental Engineering, 2nd Ed., J. Pfafflin, Ed., Gordon Breach Publishers, London, England, 1984.
27. Biswas, H., Bell, B.A., and Stuart, T.S., *A Method for Establishing Site-Specific Stream Design Flows for Wasteload Allocations*, Journal of the Water Pollution Control Federation, 56, 10, 1123-1130, 1984.
28. Bell, B.A., and Burrows, W.D., *Biological Treatment of Explosive Bearing Wastewaters*, in *Toxic and Hazardous Wastes*, Proceedings of the Nineteenth Mid-Atlantic Industrial Waste Conference, Jeffrey C. Evans, Ed., 1987.
29. Cardenas, Jr., R.R., Bell, B.A., and Hatim, M., *Application of Ultraviolet Disinfection in Small Systems*, in *Resource Mobilization for Drinking Water and Sanitation in Developing Countries*, pp 678 - 685, F.W. Montanari, T.P. Thompson, T.P. Curran, and W. Saukin, Eds., 1987.
30. Bell, B.A. and Burrows, W.D., *Removal and Degradation of TNT in a Semicontinuous Activated Sludge Treatment System*, in *Hazardous and Industrial Wastes*, Proceedings of the Twenty First Mid-Atlantic Industrial Waste Conference, C.A. Cole and D.A. Long, Eds., pp 344 - 356, 1989.
31. Joo, H.J., Sijin, L. and Bell, B. A., *CFID Application on Industrial Wastewater; Organic and Nitrogen Removal*, Proceedings of 2nd WEF Asia/Pacific Rim Conference on Water Pollution Control, Yokohama, Japan, 1992.

32. Garabed, S., Amuro, A., Stone, J., Bell, B., and Melnyk, P., A Full Scale Comparison of Conventional and DAF Primary Treatment, NYWEA Environmental Technical Conference, Lake George, NY, 1996.

SELECTED TECHNICAL REPORTS

1. Environmental Impact of a Proposed Housing Development on Lake Waneta, N.Y., with R.R. Cardenas, Jr., 1972.
2. Water System Evaluation, Pensacola, Florida, Flood & Associates, Inc., 1976.
3. Kepone Incineration Test Program, with F.V. Whitmore, U.S.E.P.A., EPA-600/278-108, 1978.
4. Anaerobic Digestion of Thermal Sludge Conditioning Decant Liquor and Conditioned Sludge, Carpenter Associates, Inc., 1979.
5. Discharge and Treatment of Spent Toner Wastes, Carpenter Environmental Associates, Inc., 1981.
6. Final Technical Report, Cation Toxicity in the Anaerobic Digestion of Lime Sludge, U.S. Army Medical Bioengineering Research and Development Laboratory, Technical Report 8205, 1982.
7. Final Technical Report, Munitions Wastewater Treatment in Semicontinuous Activated Sludge Treatment Systems, U.S. Army Armament Research and Development Center, Large Caliber Weapon Systems Laboratory, Dover, N.J., Contractor Report ARLCD-CR-84029, 1984.
8. Environmental Evaluation of the Use, Handling, Storage and Transportation of Chemicals at an Industrial Facility in Briarcliff Manor, N.Y., Carpenter Environmental Associates, Inc., 1985.
9. Final Technical Report, A Simplified Method for the Determination of Mixing Zones in Estuaries, USEPA, 1985.
10. Final Technical Report, Pilot Scale Evaluation of Semicontinuous Activated Sludge Treatment of Munitions Bearing Wastewater, U.S. Army Armament Research and Development Center, Large Caliber Weapon Systems Laboratory, Dover, N.J. Carpenter Environmental Associates, Inc., 1987.
11. Engineering Report - Hamlet Sewage Treatment Plant Improvements, Town of Tuxedo, N.Y., Carpenter Environmental Associates, Inc., 1987.
12. Expert Witness Report Evaluation of Lack of Compliance with NJPDES Permit, P. D. Oil & Chemical Storage, Inc., Bayonne, New Jersey, Carpenter Environmental Associates, Inc., 1988.
13. Final Report, Conceptual Design, Biological Nutrient Removal, Annapolis Water Reclamation Facility, Annapolis, Maryland, Carpenter Environmental Associates, Inc., 1989.
14. SPCC and ISC plans, ARDEC, Picatinny Arsenal, New Jersey, Carpenter Environmental Associates, Inc., 1990. Updated 1999.

15. Expert Witness Report Evaluation of Lack of Compliance with NJPDES Permit, Yates/Circuit Foil, Bordentown, New Jersey, Carpenter Environmental Associates, Inc., 1992.
16. New Lisbon Development Center Wastewater Treatment Plant Optimization Study, New Jersey Department of Human Services, Carpenter Environmental Associates, Inc., 1992.
17. Comparison of Dissolved Air Flotation and Conventional Clarification, Sand Island Wastewater Treatment Plant, Honolulu, Hawaii, P.B. Melnyk, GMP Associates, Inc. and Carpenter Environmental Associates, Inc., 1994.
18. Nitrification Toxicity Study, Mount Pocono (PA) Municipal Authority, Carpenter Environmental Associates, Inc., 1994.
19. Evaluation of Wastewater Treatment Plant, New Lisbon Development Center, New Jersey Department of Human Services, Carpenter Environmental Associates, Inc., 1995.
20. Wastewater Treatment Plant Preliminary Evaluation at Floyd Bennett Field, U. S. Department of the Interior, Carpenter Environmental Associates, Inc., 1995.
21. Expert Witness Report: Interference with Operation of the Hammond Sanitary District Wastewater Treatment Plant, Combined Sewer Overflow not in Compliance with Permit Conditions and Pollutant Loadings to the West Branch of the Grand Calumet River, prepared for the USDOJ, Carpenter Environmental Associates, Inc., 1995, Updated 1999.
22. Report on the Actions Needed for Evans Industries, Inc., Evans Cooperage Company, Inc., and Evans Container Corporation, Inc. to Come into Compliance with their Clean Water Act Discharge Permit, Carpenter Environmental Associates, Inc., 1997.
23. Evaluation Of and Comments on UPRC's Draft NPDES Permit, Carpenter Environmental Associates, Inc., 2000.

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